Cotton Yield and Within Boll Yield Component Variation is Influenced by Plant Density. (C03-may071008-Poster)

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Abstract:

World cotton yields increased until the last 10 years during which yield stagnation occurred, prompting investigation of approaches to further enhance yields, including manipulating yield components. Research has shown that boll occurrence is influenced by plant density, but effects of within row plant density on remaining yield components are unknown. We evaluated two cultivars differing in boll size and average weight of fibers per seed for yield and yield components, when produced in 0.91 m spaced rows at plant densities 4, 9, 13, and 22 plants per square meter. We found a cultivar x plant density interaction for lint yield at Plains, with FiberMax 966 yielding the same over densities, while DP458BR yielded the most at the highest plant density. Only main effects were significant at Tifton, with the highest yields produced at 22 plants per square meter. Cultivar x plant density x main stem node interactions for lint fraction and the within boll yield components seed size and average weight of fibers per seed suggest genotypic differences in yield components should be evaluated at a constant plant density and from similar main stem node groups.

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